Risk Posture as a new IPAO Product

Risk Management Colloquium V

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Agenda

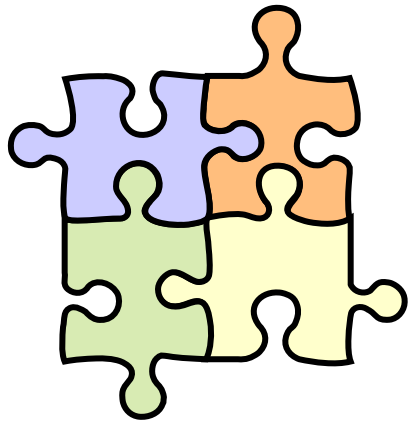
- **Introduction: the IPAO**
  - **Role of the IPAO**
  - **IPAO Risk Assessment Group**
  - **Risk Reporting Evolution**
- **A new product-“Risk Posture”**
  - **The Need for Risk Posture**
  - **Defining Risk Posture**
  - **Displaying Risk Posture**
  - **Elements of Risk Posture**
  - **Scoring Risk Posture**
- **What needs to be done**
- **Summary**

Role of The IPAO

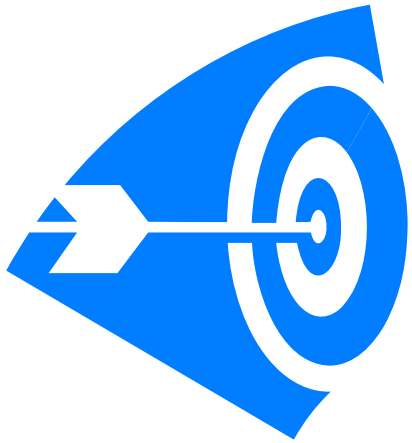
- ***Assure that NASA development efforts and missions operations are being planned and conducted on a sound engineering basis with proper controls and management of risks***
- **IPAO charters assessment teams to:**
  - **Assess compliance with NPR 7120.5 NASA Program and Project Management Processes and Requirements**
  - **Conduct multi-disciplinary program/project reviews at designated decision milestones**
  - **Perform independent cost estimates**
  - **Document and present the review results**

IPAO Risk Assessment Group

- **Evaluates project's risk management and risk assessment efforts**

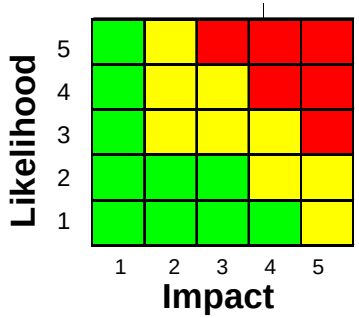


- **Develops a project risk statement based on IPAO assessment team's findings rooted in observation and objective evidence or defensible analysis**



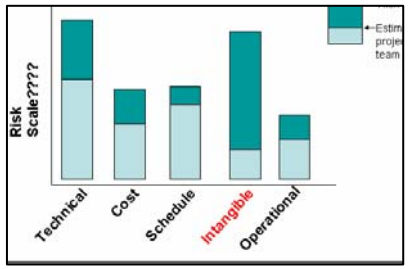
IPAO Risk Reporting

- ***Past*** **- reported findings as risks using 5x5 matrix format.**



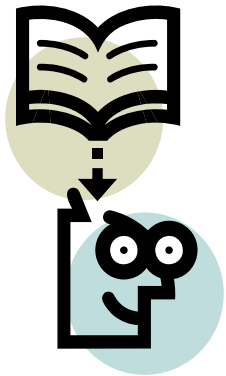
- ***Present*** **- includes project risk statement capturing team's assessment of the project.**

- ***Future*** **- develop project risk posture analysis to capture multiple aspects of risk.**



The Need for Risk Posture

- **Actionable information creates distinctions between previously indistinguishable choices**
- **Program Management Council needs <u>actionable</u> risk information to support decision-making:**
  - **Provides insight into risk presented by individual projects**
  - **Supports effective distribution of resources**
  - **Helps justify graceful termination of projects**

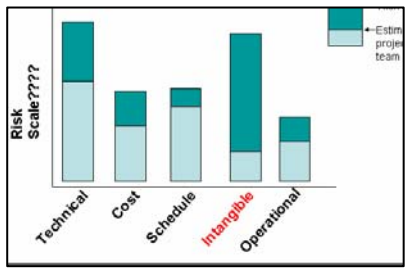


Defining Risk Posture

Risk Posture: a concise expression of actionable risk information.

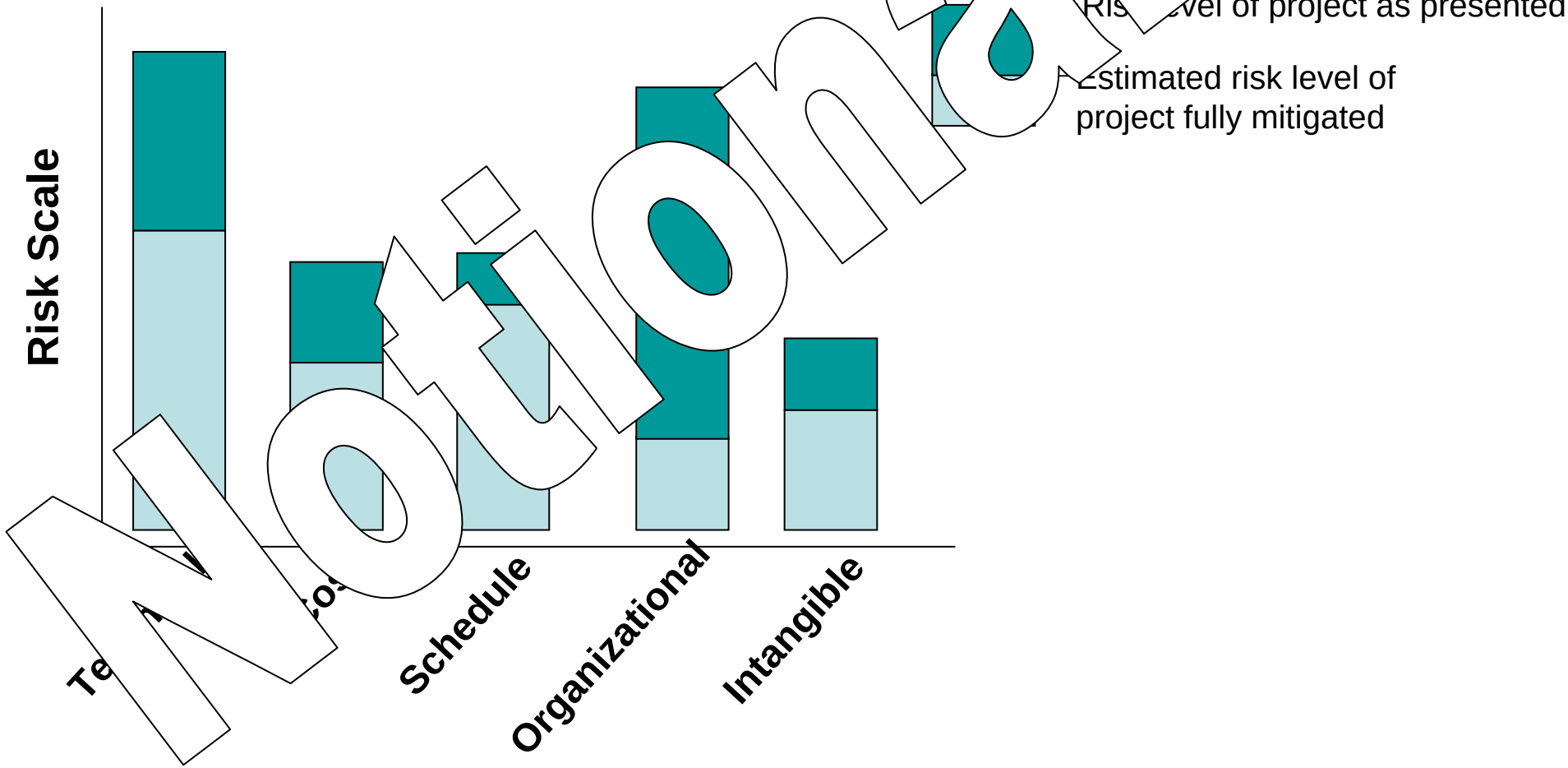
- **Can we identify a set of "risk factors" that predict NASA project success/failure?**
  - **Address full spectrum of risk**
  - **Acknowledge relationships between risk disciplines**

- **Can we score individual factors to provide an understanding of magnitude?**
  - **Measures each risk factor**
  - **Indicates potential for risk reduction**



Displaying Risk Posture

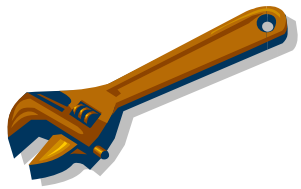
A summary of selected risk level factors displayed by a project



Elements of Risk Posture

A potential set of risk factors:

Technical risks - the risk associated with failing to meet technical performance objectives.



Cost risks - the risks associated with failing to achieve life-cycle cost objectives.

Schedule risks - the risks associated failing to meet objective schedule plans.

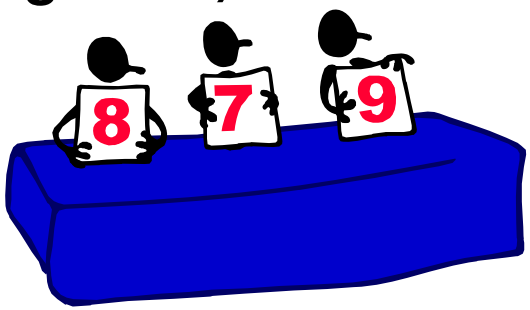
Organizational risk - risks associated with issues of competence, experience, organizational culture, and skills of the management team.

Intangible risks - other risks subjectively or objectively recognized by management that would affect project success. These may include public perception, prestige, political realities.

Scoring Risk Posture

- **Potential scales for scoring individual risk factors:**
  - **Objective measures ($, time, other)**
  - **Subjective (high, med, low)**
  - **Relative (better/worse than…)**

- **Considerations for scoring risk factors:**
  - **Incorporate planned mitigation, or lack thereof**
  - **Related to proposed schedule, funding level, and resources**



Moving Forward with Risk Posture

- **Research** 
  - **Definition of relevant risk factors as indicators of project success.**
  - **Survey of integrated (cost/schedule/technology) risk management systems.**
  - **Risk scoring systems**
  - **Including intangibles in risk summaries**
- **Buy-in** 
  - **Center level contact to identify existing products/processes and good ideas**
  - **Consensus building process to synthesize approach acceptable across agency**
- **Document and implement the product**
  - **“Guidelines for IPAO Risk Posture Assessment”**

Summary

IPAO intends to conduct research, solicit acceptance, and ultimately implement reporting of risk posture.

If you are interested in participating, contact:

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Backup

Defining Relevant Risk Factors

- **What is important for the PMC to know about the project in order to make decisions?**
  - **What does the PMC *believe* is important to know about the project in order to make decisions?**
  - **Why do projects in general fail, and how do we prevent this?**
  - **Why do NASA projects fail, and how do we prevent this?**
  - **Look at the past--what risk factors have adverse effects/ have "killed" similar NASA projects?**
  - **Can we predict project failure? And how early?**

- **Can we identify a small set (less than 10) of risk factors that predict NASA project success/failure?**

Integrated Risk Management Models

- **What risk management tools and systems have been successful at NASA?**
- **What risk management tools and systems outside NASA have potential inside NASA? (i.e. what other organizations and or industries operate in environments analogous to NASA's)**
- **Identify or develop an integrated risk management product and system of tools that provides translation of critical risk factor data into comprehensive, actionable information for the PMC**

Risk Scoring Systems

- **Integrated risk management model must provide a scoring schema**
  - **Simple to understand**
  - **Repeatable**
  - **Normalized**
- **Determination of appropriate scoring schema for each factor**
- **Application of relative vs. absolute scoring**
  - **Develop criteria for use**
  - **Develop scoring scales**
  - **Developing a database**

Intangible Risks

- **Defining intangible risks (public perception, prestige, political realities)**
- **How to include intangibles in risk summaries?**
  - **Concept not unique to NASA**
  - **Survey of other fields**
  - **Quantification solutions**